Chapter Four: Forecasts

Most airports included in the UCASP prepare forecasts in conjunction with either master plan or airport layout plan updates. These individual airport forecasts examine factors in detail that contribute to the growth or decline of aviation activity within the airport service area. The UCASP takes a broader view and projects future aviation activity statewide by summing the forecasts for individual airports.

Forecasts of commercial and general aviation activity, presented in this chapter, project the level of activity expected at Utah airports over the next 20 years. These activity projections assist in the verification of the roles identified in the previous chapter for each study airport. The projections also help to determine whether existing facilities are adequate to accommodate future aviation demand.

The 20-year forecast period is 2006 through 2026 and includes the following components of aviation activity in Utah:

- Annual passenger enplanements
- Annual commercial and air taxi operations
- Based general aviation aircraft
- Annual general aviation operations
- Annual military operations
- Air cargo activity

APPROACH TO FORECASTING

Forecasts at the individual airport level delve into the specific functions that drive aviation demand. Typically, these include a close examination of trends in population, employment, and income growth. Additionally, specific economic activities that may lead to a change (positive or negative) in demand for either commercial air service or general aviation would be examined. An airport's ability to serve current and projected demand for aviation services and its competitive position in relation to other nearby airports is also considered. For statewide forecasts, the perspective is a "big-picture" overview of current and future aviation activity in Utah. Statewide forecasts are developed to estimate the change in aviation activity at Utah airports over the next 20 years. Because statewide forecasts are intended to provide a general indication of future aviation activity in the State, projected population growth rates at the county level from the Utah Governor's Office of Planning and Budget were used as the basis for development of aircraft operations, based aircraft, passenger enplanements, and air cargo forecasts for each system airport.

UTAH AVIATION TRENDS

Aviation activity in Utah reflects a mix of economic activities within the state and nation. National trends impacting general aviation and commercial air service have a significant

effect on local aviation demand. Local demographic and economic factors and trends also influence aviation demand. Utah has diverse economic regions that support different types of aeronautical activities. The Wasatch Front region, spanning from Utah County on the south to Weber County on the north, supports the largest concentration of business aviation, military operations, and commercial aviation activity. Airports in the remaining more sparsely populated areas of the state support extensive general aviation activities and limited air taxi and commercial service activity. Recent increased interest in energy development near the cities of Richfield, Price and Vernal has also sparked a current spike in demand for aviation services.

NATIONAL TRENDS IMPACTING UTAH AVIATION

As indicated, forecasts of aviation activity at Utah's system of airports are based on projected population growth rates in each county. However, certain national shifts within the airline industry and business aviation will also impact aviation in Utah over the forecast period. The most significant include:

- The ability of the legacy carriers to effectively compete with the low cost carriers through further reductions in non-fuel operating costs, achievement of a fuel efficient fleet, and a route system that emphasizes the highest yield in profitable markets.

- Continued retirement of the existing turboprop fleet used to serve smaller markets and the extent to which the airlines embrace newer technology turboprop aircraft, such as Bombardier Aerospace's Q400. These aircraft could operate well at Utah's high elevation airports, but may be too large to be profitable on routes serving Utah's smaller communities.

- A shift in the U.S. away from larger jets to regional jets (RJ) and greater use of RJs with 70 or more seats.

- Changes in regulation and funding of the Federal Essential Air Service (EAS) program that could directly impact scheduled commercial air service at the Vernal, Moab and Cedar City airports.

- The extent to which corporate aviation embraces micro jets or very light jets (VLJs) and develops point-to-point air service using these aircraft.

- The degree to which higher aircraft operating costs and potential user fees and taxes reduce general aviation recreational and business flying.

FORECAST OF COMMERCIAL ACTIVITY

The commercial aviation forecasts in this chapter include projections of both passenger enplanements and commercial aircraft operations. Forecasts of commercial aviation activity were developed by examining current levels of passenger enplanements and commercial operations at each airport presented in Chapter 2. With the exception of the new St. George airport, passenger enplanements and commercial operations are projected to grow at the population growth rate projected for the county in which the airport is located. Passenger enplanement and commercial operations forecasts for the new St. George airport are based on the recent Final Environmental Impact Statement forecast completed for the new St. George airport.

Commercial operations are divided into two categories, air carrier and air taxi. Air carrier operations operate on a set schedule, while air taxi operations are composed of commercial charter operations that operate "on demand" on a charter and/or non-scheduled basis. Air taxi operators are not permitted to publish time schedules or issue tickets to passengers. Air taxi operations are conducted at most of the airports in the Utah system. The development of Very Lights Jets (VLJs) is projected to lower the cost of air taxi service causing an increased number of operations in the future. **Table 4-1** summarizes the passenger enplanements forecasts for each commercial service airport. **Table 4-2** summarizes the forecast number of scheduled commercial aircraft operations and air taxi operations at all Utah airports included in the UCASP. Over 98 percent of the State's passenger enplanements and 95 percent of scheduled commercial operations are projected to occur at Salt Lake City International Airport. The Wendover Airport is projected to experience the largest percentage increase in enplanements and scheduled commercial operations, growing by 67 percent over the 20 year forecasting period.

Table 4-1
Passenger Enplanement Forecasts

Associated City	Airport	Passenger Enplanements				
		2006	2011	2016	2026	2006 - 2026 AARC**
International Airports						
Salt Lake City	Salt Lake City International	10,762,203	11,423,620	12,125,686	13,661,910	**1.20%**
National Airports						
St George *	St George Municipal - New	53,777	82,420	102,020	141,220	**4.10%**
Wendover	Wendover	45,506	51,738	58,822	76,035	**2.60%**
Regional Airports						
Cedar City	Cedar City Regional	7,658	8,580	9,613	12,068	**2.30%**
Moab	Moab-Canyonlands Field	3,414	3,483	3,553	3,698	**0.40%**
Vernal	Vernal	2,123	2,177	2,232	2,346	**0.50%**
Community Airports						
Bryce Canyon	Bryce Canyon	2,857	3,003	3,156	3,486	**1.00%**
Totals		**10,877,538**	**11,575,020**	**12,305,082**	**13,900,763**	**1.23%**

*St George Enplanement Forecast derived from Final Environmental Impact Statement May, 2006
**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2007

Table 4-2
Commercial Operation Forecasts

Associated City	Airport	Air Carrier	Air Taxi	Air Carrier	Air Taxi	Air Carrier	Air Taxi	Air Carrier	Air Taxi	AARC**
		2006		2011		2016		2026		2006 - 2026
International Airports										
Salt Lake City	Salt Lake City International	165,035	186,202	175,178	197,645	185,944	209,792	209,501	236,371	1.20%
National Airports										
St. George *	St George New	6,277	1,158	6,982	1,270	7,192	1,320	7,612	1,420	0.77%
Wendover	Wendover	60	110	68	125	78	142	100	184	2.60%
Regional Airports										
Bountiful	Skypark		150		158		167		187	1.10%
Brigham City	Brigham City Municipal		280		305		331		392	1.70%
Cedar City	Cedar City Regional	2,760	0	3,092	0	3,465	0	4,349	0	2.30%
Heber	Heber City Municipal		1,510		1,742		2,010		2,675	2.90%
Hurricane	Hurricane		10		12		15		21	3.90%
Kanab	Kanab Municipal		60		64		69		79	1.40%
Logan	Logan-Cache		800		892		994		1,236	2.20%
Moab	Moab-Canyonlands Field	1,660	800	1,693	816	1,728	833	1,798	866	0.40%
Morgan	Morgan County		20		24		29		42	3.80%
Nephi	Nephi Municipal		30		32		35		40	1.50%
Ogden	Ogden-Hinckley Municipal	9	713	10	761	10	811	12	923	1.30%
Price	Price-Carbon County		1,010		1,041		1,072		1,138	0.60%
Provo	Provo Municipal	52	2,011	58	2,253	65	2,524	82	3,169	2.30%
Richfield	Richfield Municipal		140		146		153		167	0.90%
Salt Lake City	Salt Lake City Muni 2		430		456		484		546	1.20%
Spanish Fork	Spanish Fork-Springville		330		370		414		520	2.30%
Tooele	Tooele Valley Airport		110		125		142		184	2.60%
Vernal	Vernal	1,450	713	1,487	731	1,524	749	1,602	788	0.50%
Community Airports										
Beaver	Beaver Municipal		50		55		62		76	2.10%
Blanding	Blanding Municipal		100		103		106		113	0.60%
Bryce Canyon	Bryce Canyon		50		53		55		61	1.00%
Delta	Delta Municipal		100		105		110		122	1.00%

Table 4-2, Continued
Commercial Operation Forecasts

Associated City	Airport	Air Carrier	Air Taxi	Air Carrier	Air Taxi	Air Carrier	Air Taxi	Air Carrier	Air Taxi	AARC
		2006		2011		2016		2026		2006 - 2026
Community Airports										
Eagle Mountain	Jake Garn		50		52		54		57	0.70%
Escalante	Escalante Municipal		0		0		0		0	2.30%
Fillmore	Fillmore		10		11		11		12	1.00%
Green River	Green River		100		103		106		113	0.60%
Manti	Manti-Ephraim		10		11		11		12	1.00%
Milford	Milford Municipal		30		33		37		45	2.10%
Monticello	Monticello		50		52		53		56	0.60%
Panguitch	Panguitch Municipal		10		11		11		12	1.00%
Parowan	Parowan		30		34		38		47	2.30%
Roosevelt	Roosevelt Municipal		30		32		34		38	1.20%
Local Airports										
Bluff	Bluff Airport		0		0		0		0	0.60%
Duchesne	Duchesne Municipal		50		54		59		70	1.70%
Dutch John	Dutch John		20		21		23		25	1.20%
Glen Canyon Natl. Rec. Area	Bullfrog Basin		30		33		36		42	1.70%
Halls Crossing	Halls Crossing		100		103		106		113	0.60%
Hanksville	Hanksville		50		53		56		63	1.20%
Huntington	Huntington Municipal		20		21		21		23	0.60%
Junction	Junction		0		0		0		0	0.70%
Loa	Wayne Wonderland		10		11		11		13	1.20%
Manila	Manila		20		21		21		23	0.70%
Mount Pleasant	Mount Pleasant		10		11		11		12	1.00%
Salina	Salina-Gunnison		0		0		0		0	0.90%
Totals		**177,303**	**197,517**	**188,568**	**209,951**	**200,005**	**223,119**	**225,056**	**252,096**	**1.20%**

*St. George operations forecast derived from Final Environmental Impact Statement Forecast May, 2006
**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2006

GENERAL AVIATION FORECASTS

General aviation activity forecasts are an important step in evaluating the need for and phasing of future development. Forecasts can be used to identify where future system shortfalls may exist in accommodating future aviation demand. Also, forecasts can help to identify those airports that may now, or in the future, function in a different role within the system.

Similar to the commercial forecasts, the forecast period for general aviation activity is 20 years with a base year of 2006. Key components of the general aviation forecasts and their definitions include:

- Based Aircraft - The total number of active general aviation aircraft that are either hangared or tied down at an airport. Active is defined by the FAA as an aircraft that flew one or more hours during the previous year.

- Operations - The number of individual takeoffs and landings. If an aircraft takes off from an airport, and then lands at the same airport it is counted as two operations.

Unlike commercial aviation where carriers are required to report information about their operations, (type of aircraft used, passengers carried, and revenues collected) general aviation is not subject to these federal reporting requirements. Only three of Utah's public-use airports have an air traffic control tower to track the number of operations. The remaining public use airports in Utah estimate the number of operations and fleet mix. The UDOA has used automated acoustical counters at many airports in the State to establish a more consistent (2006) baseline for the development of forecasts.

UDOA's 2006 estimate of current operations and based general aviation aircraft form the baseline for the 20-year projections. Future growth is projected to occur at the rate forecasted for population growth in the county in which the airport is located. Wherever possible, local survey data from the UDOA acoustical counters was used as it provided a consistent and up-to-date basis for evaluation.

Based Aircraft Forecasts

A total of 2,326 aircraft were based at Utah airports in 2006. Similar to operations, based aircraft are projected to increase at the population growth rate projected for the county in which the airport is located. **Table 4-3** presents forecasts for based aircraft at individual Utah airports. Using the above described methodology, statewide based aircraft will grow to a total of 3,282 based aircraft in 2026. This is an increase of over 956 based aircraft and an average annual growth rate of 1.7 percent over the 20-year forecast period. This rate of annual growth is consistent with the FAA's national forecast of active general aviation aircraft which projects an average annual growth rate of 1.4 percent nationally.

Table 4-3
General Aviation Based Aircraft Forecasts

Associated City	Airport	Based Aircraft				
		2006	2011	2016	2026	2006 - 2026 AARC**
International Airports						
Salt Lake City	Salt Lake City International	322	342	363	409	1.20%
National Airports						
St. George*	St. George Municipal	177	188	199	225	1.20%
Wendover	Wendover	9	10	12	15	2.60%
Regional Airports						
Bountiful	Skypark	208	220	232	259	1.10%
Brigham City	Brigham City Municipal	80	87	95	112	1.70%
Cedar City	Cedar City Regional	48	54	60	76	2.30%
Heber	Heber City Municipal	100	115	133	177	2.90%
Hurricane	Hurricane	68	82	100	146	3.90%
Kanab	Kanab Municipal	19	20	22	25	1.40%
Logan	Logan-Cache	136	152	169	210	2.20%
Moab	Moab-Canyonlands Field	25	26	26	27	0.40%
Morgan	Morgan County	70	84	102	148	3.80%
Nephi	Nephi Municipal	9	10	10	12	1.50%
Ogden	Ogden-Hinckley Municipal	292	311	332	378	1.30%
Price	Price-Carbon County	34	35	36	38	0.60%
Provo	Provo Municipal	166	186	208	262	2.30%
Richfield	Richfield Municipal	29	30	32	35	0.90%
Salt Lake City	Salt Lake City Muni 2	214	227	241	272	1.20%
Spanish Fork	Spanish Fork-Springville	111	124	139	175	2.30%
Tooele	Tooele Valley Airport	20	23	26	33	2.60%
Vernal	Vernal	34	35	36	38	0.50%
Community Airports						
Beaver	Beaver Municipal	12	13	15	18	2.10%
Blanding	Blanding Municipal	16	16	17	18	0.60%
Bryce Canyon	Bryce Canyon	9	9	10	11	1.00%
Delta	Delta Municipal	9	10	11	13	1.70%
Eagle Mountain	Jake Garn	1	1	1	2	2.30%
Escalante	Escalante Municipal	2	2	2	2	1.00%
Fillmore	Fillmore	1	1	1	1	1.70%
Green River	Green River	6	6	6	7	0.60%
Manti	Manti-Ephraim	3	3	3	4	1.00%
Milford	Milford Municipal	4	4	5	6	2.10%
Monticello	Monticello	9	9	10	10	0.60%
Panguitch	Panguitch Municipal	5	5	6	6	1.00%
Parowan	Parowan	33	37	41	52	2.30%
Roosevelt	Roosevelt Municipal	12	13	14	15	1.20%

Table 4-3, Continued
General Aviation Based Aircraft Forecasts

Associated City	Airport	Based Aircraft				
		2006	2011	2016	2026	2006 - 2026 AARC
Local Airports						
Bluff	Bluff Airport	4	4	4	5	0.60%
Duchesne	Duchesne Municipal	8	8	9	10	1.20%
Dutch John	Dutch John	0	0	1	1	0.70%
Glen Canyon Natl. Rec. Area	Bullfrog Basin	0	0	0	0	1.00%
Halls Crossing	Halls Crossing	0	0	0	1	0.60%
Hanksville	Hanksville	3	3	3	4	1.20%
Huntington	Huntington Municipal	4	4	4	5	0.60%
Junction	Junction	0	0	1	1	0.70%
Loa	Wayne Wonderland	4	4	5	5	1.20%
Manila	Manila	0	0	1	1	0.70%
Mount Pleasant	Mount Pleasant	5	5	6	6	1.00%
Salina	Salina-Gunnison	5	5	5	6	0.90%
STATE TOTALS		**2,326**	**2,528**	**2,754**	**3,280**	**1.70%**

*St. George based aircraft forecast derived from Final Environmental Impact Statement Forecast May, 2006
**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2006

General Aviation Operations Forecast

Projections of general aviation aircraft operations (landings and takeoffs) help to determine whether existing capacity is sufficient to handle future demand. Some airports in Utah support extensive numbers of flight training, corporate, and other forms of flight operations. These airports are some of the most utilized facilities in Utah. **Table 4-4** lists the top 10 airports with the largest number of general aviation operations. General aviation operations are highly concentrated in northern Utah in and around the Wasatch Front area. The top 10 airports handle over 75 percent of Utah's total general aviation operations. In 2006, Provo Municipal Airport supported the highest number of general aviation operations in the State, followed by Ogden Hinckley, Logan-Cache, and Skypark airports.

Table 4-4
Top 10 Airports Ranked by 2006 Total General Aviation Operations

Associated City	Airport	Total GA Operations	Percent of Total GA Operations
Provo	Provo Municipal	156,868	16.2%
Ogden	Ogden-Hinckley	115,076	11.9%
Logan	Logan-Cache	79,600	8.2%
Bountiful	Skypark	75,762	7.8%
Salt Lake City	Salt Lake City International	66,324	6.9%
Salt Lake City	Salt Lake #2	65,823	6.8%
Spanish Fork	Spanish Fork-Springville	54,891	5.7%
Tooele	Tooele Valley Airport	44,888	4.6%
Heber	Heber City Municipal	38,746	4.0%
Brigham City	Brigham City Municipal	37,490	3.9%

Source: UDOA, Wilbur Smith Associates, 2006

General aviation operations are divided into two main categories, itinerant and local. Many airports in Utah have more itinerant operations than local operations, indicating the airport serves primarily as a "destination airport". A "destination airport" is used more by people traveling to and from the area than by locally based pilots. Airports with higher numbers of itinerant operations tend to provide higher levels of economic impact, since these operations are generally associated with people traveling to the airport from outside the local area for business, recreation or other purposes. **Table 4-5** presents the current number of general aviation local and itinerant operations for each of the study airports. **Table 4-6** presents the forecasted number of total general aviation operations over the 20-year forecast period.

Table 4-5
2006 Local and Itinerant General Aviation Operations

Associated City	Airport	General Aviation Operations		
		Local	Itinerant	Total
International Airports				
Salt Lake City	Salt Lake City International	2,188	64,136	66,324
National Airports				
St. George	St. George Municipal	20,233	15,264	35,497
Wendover	Wendover	4,208	2,104	6,312
Regional Airports				
Bountiful	Skypark	60,731	15,031	75,762
Brigham City	Brigham City Municipal	31,265	6,225	37,490
Cedar City	Cedar City Regional	23,251	1,717	24,968
Heber	Heber City Municipal	32,246	6,500	38,746
Hurricane	Hurricane	12,574	5,380	17,953
Kanab	Kanab Municipal	6,507	1,826	8,334
Logan	Logan-Cache	68,386	11,214	79,600
Moab	Moab-Canyonlands Field	9,073	9,256	9,442
Morgan	Morgan County	9,171	2,270	11,441

Table 4-5, Continued
2006 Local and Itinerant General Aviation Operations

Associated City	Airport	General Aviation Operations		
		Local	Itinerant	Total
Regional Airports				
Nephi	Nephi Municipal	5,134	876	6,010
Ogden	Ogden-Hinckley Municipal	77,717	37,359	115,076
Price	Price-Carbon County	8,589	2,619	11,207
Provo	Provo Municipal	97,197	59,671	156,868
Richfield	Richfield Municipal	11,377	2,702	14,079
Salt Lake City	Salt Lake City Muni 2	57,000	8,823	65,823
Spanish Fork	Spanish Fork-Springville	46,939	7,952	54,891
Tooele	Tooele Valley Airport	29,250	15,638	44,888
Vernal	Vernal	7,354	2,352	9,706
Community Airports				
Beaver	Beaver Municipal	4,690	341	5,031
Blanding	Blanding Municipal	5,340	1,050	6,390
Bryce Canyon	Bryce Canyon	4,819	4,472	9,290
Delta	Delta Municipal	2,990	1,192	4,182
Eagle Mountain	Jake Garn	3,518	185	3,703
Escalante	Escalante Municipal	391	248	639
Fillmore	Fillmore	892	865	1,757
Green River	Green River	2,001	1,901	3,903
Manti	Manti-Ephraim	1,258	303	1,561
Milford	Milford Municipal	2,927	1,223	4,150
Monticello	Monticello	3,353	788	4,141
Panguitch	Panguitch Municipal	1,474	479	1,953
Parowan	Parowan	8,783	2,163	10,946
Roosevelt	Roosevelt Municipal	3,824	923	4,747
Local Airports				
Bluff	Bluff Airport	968	499	1,467
Duchesne	Duchesne Municipal	2,189	616	2,805
Dutch John	Dutch John	15	196	211
Glen Canyon Natl. Rec. Area	Bullfrog Basin	226	122	349
Halls Crossing	Halls Crossing	204	1,402	1,606
Hanksville	Hanksville	763	358	1,120
Huntington	Huntington Municipal	1,100	452	1,552
Junction	Junction	18	102	121
Loa	Wayne Wonderland	1,254	303	1,557
Manila	Manila	15	225	240
Mount Pleasant	Mount Pleasant	1,823	442	2,265
Salina	Salina-Gunnison	1,255	418	1,674
STATE TOTALS		**674,507**	**292,898**	**967,405**

Source: UDOA, Wilbur Smith Associates, 2006

Table 4-6
General Aviation Operation Forecasts

Associated City	Airport					
		2006	2011	2016	2026	2006 – 2026 AARC**
International Airports						
Salt Lake City	Salt Lake City International	66,324	70,400	74,727	84,194	1.2%
National Airports						
St. George*	St. George Municipal	35,497	36,983	38,698	42,128	0.9%
Wendover	Wendover	6,312	7,177	8,160	10,547	2.6%
Regional Airports						
Bountiful	Skypark	75,762	80,021	84,521	94,292	1.1%
Brigham City	Brigham City Municipal	37,490	40,786	44,373	52,521	1.7%
Cedar City	Cedar City Regional	24,968	27,974	31,342	39,345	2.3%
Heber	Heber City Municipal	38,746	44,700	51,569	68,634	2.9%
Hurricane	Hurricane	17,953	21,738	26,321	38,589	3.9%
Kanab	Kanab Municipal	8,334	8,934	9,577	11,005	1.4%
Logan	Logan-Cache	79,600	88,750	98,952	123,007	2.2%
Moab	Moab-Canyonlands Field	9,073	9,256	9,442	9,827	0.4%
Morgan	Morgan County	11,441	13,787	16,613	24,122	3.8%
Nephi	Nephi Municipal	6,010	6,474	6,975	8,094	1.5%
Ogden	Ogden-Hinckley Municipal	115,076	122,753	130,942	148,996	1.3%
Price	Price-Carbon County	11,207	11,548	11,898	12,632	0.6%
Provo	Provo Municipal	156,868	175,757	196,920	247,199	2.3%
Richfield	Richfield Municipal	14,079	14,724	15,398	16,842	0.9%
Salt Lake City	Salt Lake City Muni 2	65,823	69,868	74,162	83,557	1.2%
Spanish Fork	Spanish Fork-Springville	54,891	61,500	68,906	86,499	2.3%
Tooele	Tooele Valley Airport	44,888	51,034	58,023	75,002	2.6%
Vernal	Vernal	9,706	9,951	10,202	10,724	0.5%
Community Airports						
Beaver	Beaver Municipal	5,031	5,582	6,193	7,624	2.1%
Blanding	Blanding Municipal	6,390	6,584	6,784	7,203	0.6%
Bryce Canyon	Bryce Canyon	9,290	9,764	10,262	11,336	1.0%
Delta	Delta Municipal	4,182	4,550	4,950	5,859	1.7%

Table 4-6, Continued
General Aviation Operation Forecasts

Associated City	Airport					
		2006	2011	2016	2026	2006 - 2026 AARC
Community Airports						
Eagle Mountain	Jake Garn	3,703	4,149	4,648	5,835	2.3%
Escalante	Escalante Municipal	639	671	706	779	1.0%
Fillmore	Fillmore	1,757	1,911	2,079	2,461	1.7%
Green River	Green River	3,903	4,021	4,143	4,399	0.6%
Manti	Manti-Ephraim	1,561	1,641	1,725	1,905	1.0%
Milford	Milford Municipal	4,150	4,604	5,109	6,289	2.1%
Monticello	Monticello	4,141	4,266	4,396	4,667	0.6%
Panguitch	Panguitch Municipal	1,953	2,053	2,158	2,383	1.0%
Parowan	Parowan	10,946	12,264	13,741	17,249	2.3%
Roosevelt	Roosevelt Municipal	4,747	5,038	5,348	6,025	1.2%
Local Airports						
Bluff	Bluff Airport	1,467	1,511	1,557	1,653	0.6%
Duchesne	Duchesne Municipal	2,805	2,977	3,160	3,561	1.2%
Dutch John	Dutch John	211	218	226	242	0.7%
Glen Canyon Natl. Rec. Area	Bullfrog Basin	349	367	385	426	1.0%
Halls Crossing	Halls Crossing	1,606	1,655	1,705	1,810	0.6%
Hanksville	Hanksville	1,120	1,189	1,262	1,422	1.2%
Huntington	Huntington Municipal	1,552	1,599	1,648	1,750	0.6%
Junction	Junction	121	125	129	139	0.7%
Loa	Wayne Wonderland	1,557	1,653	1,754	1,977	1.2%
Manila	Manila	240	248	257	275	0.7%
Mount Pleasant	Mount Pleasant	2,265	2,380	2,502	2,764	1.0%
Salina	Salina-Gunnison	1,674	1,751	1,831	2,002	0.9%
STATE TOTALS		**967,405**	**1,056,888**	**1,156,378**	**1,389,790**	**1.83%**

*St. George operations forecast derived from Final Environmental Impact Statement Forecast May, 2006
**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2006

Military Operations

Table 4-7 presents the distribution of military operations at Utah's non-military airports. Statewide, military operations are a relatively small component of the total operations conducted at Utah's non-military airports. In 2006, they represented less than one percent of the total operations conducted statewide. The largest concentration of military operations occurred at Salt Lake City Muni #2 and Salt Lake City International Airports. Both airports are home to National Guard bases. Changes in military operations are highly dependent on specific events and are likely to have the greatest impact on airports with the largest existing military presence. Changes in military flying activity in the State are very difficult to predict, and experience over many years shows that variations are temporary. For these reasons, military operations in this UCASP are considered to be constant over the 20-year span.

Table 4-7
Military Operation Forecasts

Associated City	Airport	2006	2011	2016	2026	2006 - 2026 AARC**
International Airports						
Salt Lake City	Salt Lake City International	1,927	1,927	1,927	1,927	0.00%
National Airports						
St. George	St. George Municipal	210	210	210	210	0.00%
Regional Airports						
Cedar City	Cedar City Regional	215	215	215	215	0.00%
Heber	Heber City Municipal	50	50	50	50	0.00%
Logan	Logan-Cache	50	50	50	50	0.00%
Moab	Moab-Canyonlands Field	100	100	100	100	0.00%
Ogden	Ogden-Hinckley Municipal	318	318	318	318	0.00%
Price	Price-Carbon County	50	50	50	50	0.00%
Provo	Provo Municipal	862	862	862	862	0.00%
Salt Lake City	Salt Lake City Muni 2	5,000	5,000	5,000	5,000	0.00%
Vernal	Vernal	100	100	100	100	0.00%
STATE TOTALS		**8,882**	**8,882**	**8,882**	**8,882**	

**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2006

Air Cargo

Six airports in Utah currently receive regular air cargo service. These airports, with the exception of Price – Carbon County, also receive scheduled commercial air service. The majority of all air cargo shipped in the State of Utah is transported to and from Salt Lake City International Airport. Air cargo is transferred to and from larger aircraft at Salt Lake City International Airport to smaller "feeder" aircraft that transport smaller loads to and from smaller communities throughout the State. To identify future levels of air cargo activity in Utah, air cargo activity was projected to grow at the rate forecast for population in the county in which the airport is located. **Table 4-8** details the amount of cargo, in pounds, projected to be enplaned and deplaned (loaded and unloaded) at individual airports in Utah currently receiving regular air cargo service.

Table 4-8
Air Cargo Forecasts*

		2006		2011		2016		2026		2006 - 2026
Associated City	**Airport**	**Enplaned**	**Deplaned**	**Enplaned**	**Deplaned**	**Enplaned**	**Deplaned**	**Enplaned**	**Deplaned**	**AARC****
International Airports										
Salt Lake City	Salt Lake City International	17,910,000	17,512,000	19,010,702	18,588,242	20,179,050	19,730,626	22,735,569	22,230,335	1.20%
National Airports										
St. George	St George New	674,604	1,422,540	816,821	1,722,433	989,018	2,085,547	1,449,973	3,057,563	3.90%
Wendover	Wendover	1,260	0	1,433	0	1,629	0	2,105	0	2.60%
Regional Airports										
Cedar City	Cedar City Regional	273,168	554,400	306,061	621,157	342,915	695,952	430,470	873,647	2.30%
Price	Price-Carbon County	63,000	378,000	64,913	389,477	66,884	401,302	71,007	426,041	0.60%
Vernal	Vernal	100,800	466,200	103,345	477,972	105,955	490,042	111,373	515,102	0.50%
STATE TOTALS		**438,228**	**1,398,600**	**475,752**	**1,488,606**	**517,382**	**1,587,296**	**614,955**	**1,814,790**	**1.41%**

*Pounds of enplaned and deplaned cargo
**AARC - Average Annual Rate of Change
Source: UDOA, Wilbur Smith Associates, 2006

AIRFIELD CAPACITY

Following the development of operations forecasts, the ability of an airport to accommodate the projected levels of activity is typically assessed. The accepted method of determining an airport's capacity is outlined in FAA AC 150/5060-5, *Airport Capacity and Delay*. The following key terms are relative to the discussion of capacity:

- Demand – the magnitude of aircraft operations to be accommodated in a specified period of time.
- Capacity – a measure of the maximum number of aircraft operations that can be accommodated in a specified period of time
- Annual Service Volume (ASV) – a reasonable estimate of the airport's annual capacity
- Delay – the difference between the actual time it takes an aircraft to operate on the airfield and the time it would take the aircraft if it were operating without interference from other aircraft, usually expressed in minutes

The methodology used in the UCASP focuses on annual service volume (ASV), which is commonly used by the FAA as a quantifiable measure of operating capacity as well as hourly capacity. The calculation of ASV and comparison to projected demand is an important tool in the short and long-range planning process for each airport.

Factors Affecting Airfield Capacity

For this analysis a general approach was used in determine the ASV for each system airport. The factors considered include: airfield layout, type of approach procedure, and the presence or lack of an air traffic control tower. In a more detailed airport master plan-level analysis, several other factors would also be considered including aircraft fleet mix, percent of touch and go operations, and the number and spacing of exit taxiways. Capacity is an important issue at Salt Lake City International Airport especially during inclement weather conditions. Airspace limitations due to surrounding mountainous terrain is responsible for the majority of the constraint. The Salt Lake City International Master Plan has identified these issues and makes appropriate recommendations for improvements.

Table 4-9 presents the current and projected total operations for each airport in addition to the current and projected ASV for each airport. Generally, it is not desirable for an airport's operations to exceed 60 percent of its annual airfield capacity without planning for capacity enhancements or implementing demand management strategies. When airport activity reaches 80 percent of annual capacity, new airfield facilities may be constructed or demand management strategies would be put in place to control or reduce delay. The Logan and Ogden airports are each projected to exceed 60 percent of their ASV over the forecast period, with the Provo airport exceeding 100 percent of its annual operating capacity before the year 2026. The forecasts developed in this chapter are insufficient to make the case that airfield capacity improvements will be required at

these airports; however, potential capacity issues should be studied carefully at these airports during the next airport master plan or ALP update.

Table 4-9
Total Operations Forecast / Current and Projected ASV and Capacity Utilization

Associated City	Airport	Total 2006	Total 2011	Total 2016	Total 2026	ASV	% ASV 2006	% ASV 2026
International Airports								
Salt Lake City	Salt Lake City International	419,488	445,150	472,390	531,993	413,000	**102%**	**129%**
National Airports								
St. George	St. George Municipal	45,307	44,985	47,005	51,075	195,500	23%	26%
Wendover	Wendover	7,072	8,041	9,142	11,817	161,000	4%	7%
Regional Airports								
Bountiful	Skypark	75,912	80,180	84,688	94,478	172,500	44%	55%
Brigham City	Brigham City Municipal	37,770	41,091	44,704	52,913	218,500	17%	24%
Cedar City	Cedar City Regional	32,293	36,155	40,483	50,764	207,000	16%	25%
Heber	Heber City Municipal	40,306	46,492	53,628	71,359	195,500	21%	37%
Hurricane	Hurricane	17,963	21,750	26,336	38,610	149,500	12%	26%
Logan	Logan-Cache	80,450	89,692	99,996	124,294	195,500	41%	**64%**
Kanab	Kanab Municipal	8,394	8,998	9,646	11,084	161,000	5%	7%
Moab	Moab-Canyonlands Field	11,833	12,069	12,311	12,808	195,500	6%	7%
Morgan	Morgan County	11,461	13,811	16,642	24,165	149,500	8%	16%
Nephi	Nephi Municipal	6,040	6,507	7,009	8,135	184,000	3%	4%
Ogden	Ogden-Hinckley Municipal	116,116	123,841	132,082	150,248	218,500	53%	**69%**
Price	Price-Carbon County	12,267	12,638	13,020	13,820	184,000	7%	8%
Provo	Provo Municipal	159,793	178,930	200,372	251,312	230,000	**69%**	**109%**
Richfield	Richfield Municipal	14,219	14,870	15,552	17,009	161,000	9%	11%
Salt Lake City	Salt Lake City Muni 2	71,253	75,324	79,646	89,103	195,500	36%	46%
Spanish Fork	Spanish Fork-Springville	55,221	61,870	69,320	87,019	184,000	30%	47%
Tooele	Tooele Valley Airport	44,998	51,159	58,165	75,186	184,000	24%	41%
Vernal	Vernal	12,256	12,563	12,878	13,531	195,500	6%	7%

Table 4-9, Continued
Total Operation Forecasts / Current and Projected ASV and Capacity Utilization

Associated City	Airport	Total 2006	Total 2011	Total 2016	Total 2026	ASV	% ASV 2006	% ASV 2026
Community Airports								
Beaver	Beaver Municipal	5,081	5,638	6,255	7,700	149,500	3%	5%
Blanding	Blanding Municipal	6,490	6,687	6,890	7,315	161,000	4%	5%
Bryce Canyon	Bryce Canyon	9,640	10,132	10,649	11,763	184,000	5%	6%
Delta	Delta Municipal	4,232	4,604	5,009	5,929	161,000	3%	4%
Eagle Mountain	Jake Garn	3,703	4,149	4,648	5,835	138,000	3%	4%
Escalante	Escalante Municipal	649	682	717	792	149,500	0%	1%
Fillmore	Fillmore	1,787	1,944	2,115	2,503	149,500	1%	2%
Green River	Green River	4,003	4,124	4,250	4,512	172,500	2%	3%
Manti	Manti-Ephraim	1,571	1,651	1,736	1,917	149,500	1%	1%
Milford	Milford Municipal	4,180	4,638	5,146	6,334	161,000	3%	4%
Monticello	Monticello	4,191	4,318	4,449	4,723	184,000	2%	3%
Panguitch	Panguitch Municipal	1,963	2,063	2,169	2,396	149,500	1%	2%
Parowan	Parowan	10,976	12,298	13,779	17,297	184,000	6%	9%
Roosevelt	Roosevelt Municipal	4,777	5,070	5,382	6,064	161,000	3%	4%
Local Airports								
Bluff	Bluff Airport	1,467	1,511	1,557	1,653	149,500	1%	1%
Duchesne	Duchesne Municipal	2,825	2,999	3,183	3,586	161,000	2%	2%
Dutch John	Dutch John	261	270	280	300	149,500	0%	0%
Glen Canyon Natl. Rec. Area	Bullfrog Basin	449	472	496	548	149,500	0%	0%
Halls Crossing	Halls Crossing	1,706	1,758	1,811	1,923	184,000	1%	1%
Hanksville	Hanksville	1,170	1,242	1,319	1,486	149,500	1%	1%
Huntington	Huntington Municipal	1,572	1,620	1,669	1,772	161,000	1%	1%
Junction	Junction	121	125	129	139	149,500	0%	0%
Loa	Wayne Wonderland	1,567	1,663	1,766	1,989	149,500	1%	1%
Manila	Manila	260	269	278	298	149,500	0%	0%
Mount Pleasant	Mount Pleasant	2,275	2,391	2,513	2,776	149,500	2%	2%
Salina	Salina-Gunnison	1,674	1,751	1,831	2,002	149,500	1%	1%
Totals		**1,358,999**	**1,470,186**	**1,595,037**	**1,884,274**			

Source: UDOA, Wilbur Smith Associates, 2006

COMPARISON WITH FAA TERMINAL AREA FORECAST

The FAA publishes forecasts on an annual basis that summarize anticipated trends in most components of civil aviation. Each published forecast revisits previous activity forecasts and updates them after examining the previous year's trends in aviation and economic activity. Many factors are considered in the FAA's development of forecasts. Some of the most important are U.S. and international economic growth and projected aircraft operating costs. FAA forecasts generally supply one of the most detailed analyses of historic and forecasted aviation trends and provide the general framework for examining future levels of regional and national aviation activity.

The Terminal Area Forecast (TAF) is the official forecast developed annually by the FAA and includes all active airports in the National Plan of Integrated Airport System (NPIAS). **Table 4-10** compares of the total operations and based aircraft forecasts developed in this chapter of the UCASP with the TAF. The most recent TAF was published in 2006 and includes based aircraft and operation forecasts for 35 NPIAS airports in the Utah system.

The table presents a comparison of the number of based aircraft and total operations for the current and forecast years of 2006, 2016, and 2026. The percent difference between the UCASP forecast and the TAF for the year 2026 is also presented. A negative percentage indicates that the TAF projects a higher rate of the growth than the UCASP forecast, and a positive percentage indicates a lower projected rate of growth in the TAF. Generally, the FAA finds a planning forecast acceptable if the forecast falls within ten percent of the TAF.

Because of the top down general approach used to develop the forecasts in this chapter, some individual airport forecasts vary considerably from the FAA TAF. In cases were the FAA was unable to obtain accurate or verifiable baseline data, based aircraft and operations were projected to remain constant over the period of the TAF. Most of the airport forecasts showing the greatest variance from the TAF had activity levels that were projected to remain constant. Examples are: Brigham City, Duchesne, Manti and Richfield.

Statewide, comparison of the UCASP forecast with the TAF produces fairly good agreement. The combined UCASP operations forecasts are four percent higher than the TAF projections, while the combined UCASP based aircraft forecasts are 17 percent higher than the TAF forecasts.

Table 4-10
Comparison of UCASP Forecasts with FAA TAF

Associated City	Airport		UCASP 2006	FAA TAF 2006	UCASP 2016	FAA TAF 2016	UCASP 2026	FAA TAF 2026	% Difference 2026
International Airports									
Salt Lake City	Salt Lake City International	Operations	419,488	426,350	472,390	535,376	531,993	622,105	-14%
		Based Aircraft	322	326	342	373	409	425	-4%
National Airports									
St. George	St. George Municipal	Operations	45,307	44,796	47,005	50,351	51,075	56,019	-9%
		Based Aircraft	177	180	188	203	225	227	-1%
Wendover	Wendover	Operations	7,072	9,056	9,142	9,056	11,817	9,056	30%
		Based Aircraft	9	9	10	9	15	8	88%
Regional Airports									
Brigham City	Brigham City Municipal	Operations	37,770	18,022	44,704	18,022	52,913	18,022	194%
		Based Aircraft	80	80	87	80	112	80	40%
Cedar City	Cedar City Regional	Operations	32,293	34,971	40,483	36,788	50,764	38,534	32%
		Based Aircraft	48	48	54	51	76	54	40%
Heber	Heber City Municipal	Operations	40,306	48,758	53,628	64,839	71,359	83,872	-15%
		Based Aircraft	100	96	133	120	177	149	19%
Kanab	Kanab Municipal	Operations	8,394	10,250	9,646	10,250	11,084	10,250	8%
		Based Aircraft	19	19	22	19	25	19	32%
Logan	Logan-Cache	Operations	80,450	173,197	99,996	184,078	124,294	194,993	-36%
		Based Aircraft	136	139	169	165	210	192	9%
Moab	Moab-Canyonlands Field	Operations	11,833	16,388	12,311	16,388	12,808	16,388	-22%
		Based Aircraft	25	25	26	25	27	25	8%
Nephi	Nephi Municipal	Operations	6,040	6,500	7,009	6,500	8,135	6,500	25%
		Based Aircraft	9	9	10	9	12	9	35%
Ogden	Ogden-Hinckley Municipal	Operations	116,116	119,831	132,082	133,464	150,248	144,043	4%
		Based Aircraft	292	295	311	337	378	340	11%

Table 4-10, Continued
Comparison of UCASP Forecasts with FAA TAF

			UCASP	FAA TAF	UCASP	FAA TAF	UCASP	FAA TAF	% Difference
Associated City	**Airport**		**2006**	**2006**	**2016**	**2016**	**2026**	**2026**	**2026**
Regional Airports									
Price	Price-Carbon County	Operations	12,267	7,600	13,020	7,600	13,820	7,600	82%
		Based Aircraft	34	30	36	30	38	30	28%
Provo	Provo Municipal	Operations	159,793	165,837	200,372	182,379	251,312	198,692	26%
		Based Aircraft	166	167	208	182	262	197	33%
Richfield	Richfield Municipal	Operations	14,219	7,316	15,552	7,316	17,009	7,316	132%
		Based Aircraft	29	29	32	29	35	29	20%
Salt Lake City	Salt Lake City Muni 2	Operations	71,253	75,000	79,646	75,000	89,103	75,000	19%
		Based Aircraft	214	214	227	214	272	214	27%
Spanish Fork	Spanish Fork-Springville	Operations	55,221	52,700	69,320	52,700	87,019	52,700	65%
		Based Aircraft	111	111	139	111	175	111	58%
Tooele	Tooele Valley Airport	Operations	44,998	20,412	58,165	20,412	75,186	20,412	268%
		Based Aircraft	20	20	23	20	33	20	67%
Vernal	Vernal	Operations	12,256	19,650	12,878	19,650	13,531	19,650	-31%
		Based Aircraft	34	39	35	39	38	39	-4%
Community Airports									
Beaver	Beaver Municipal	Operations	5,081	2,950	6,255	2,950	7,700	2,950	161%
		Based Aircraft	12	12	13	12	18	12	52%
Blanding	Blanding Municipal	Operations	6,490	4,740	6,890	4,740	7,315	4,740	54%
		Based Aircraft	16	16	16	16	18	16	13%
Bryce Canyon	Bryce Canyon	Operations	9,640	3,132	10,649	3,132	11,763	3,132	276%
		Based Aircraft	9	9	9	9	11	9	22%
Delta	Delta Municipal	Operations	4,232	4,850	5,009	4,850	5,929	4,850	22%
		Based Aircraft	9	9	10	9	13	9	40%
Escalante	Escalante Municipal	Operations	649	751	717	822	792	893	-11%
		Based Aircraft	2	2	2	2	2	2	0%

Table 4-10, Continued
Comparison of UCASP Forecasts with FAA TAF

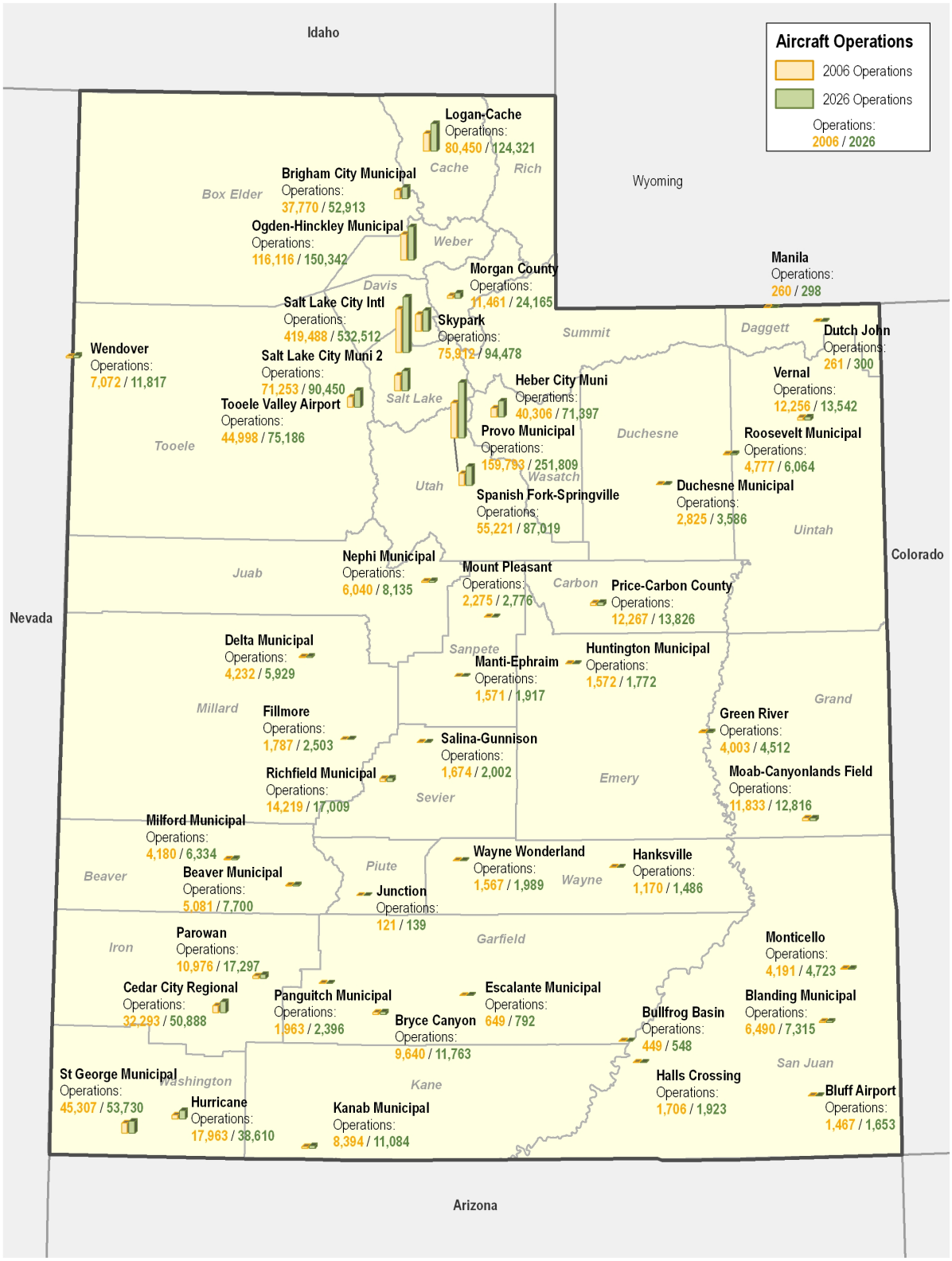
			UCASP	FAA TAF	UCASP	FAA TAF	UCASP	FAA TAF	% Difference
	Associated City	**Airport**	**2006**	**2006**	**2016**	**2016**	**2026**	**2026**	**2026**
Community Airports									
Operations	Green River	Green River	4,003	4,600	4,250	4,600	4,512	4,600	-2%
Based Aircraft			6	6	6	6	7	6	13%
Operations	Manti	Manti-Ephraim	1,571	900	1,736	900	1,917	900	113%
Based Aircraft			3	3	3	3	4	3	22%
Operations	Milford	Milford Municipal	4,180	3,465	5,146	3,465	6,334	3,465	83%
Based Aircraft			4	4	5	4	6	4	52%
Operations	Monticello	Monticello	4,191	4,650	4,449	4,650	4,723	4,650	2%
Based Aircraft			9	9	10	9	10	9	13%
Operations	Panguitch	Panguitch Municipal	1,963	1,550	2,169	1,550	2,396	1,550	55%
Based Aircraft			5	6	6	6	6	6	2%
Operations	Parowan	Parowan	10,976	11,575	13,779	11,575	17,297	11,575	49%
Based Aircraft			33	33	41	33	52	33	58%
Operations	Roosevelt	Roosevelt Municipal	4,777	6,000	5,382	6,000	6,064	6,000	1%
Based Aircraft			12	9	14	9	15	9	69%
Operations	Duchesne	Duchesne Municipal	2,825	1,560	3,183	1,560	3,586	1,560	130%
Based Aircraft			8	8	8	8	10	8	27%
Operations	Halls Crossing	Halls Crossing	1,706	2,400	1,811	2,400	1,923	2,400	-20%
Based Aircraft			0	0	0	0	0	0	0%
Operations	Hanksville	Hanksville	1,170	1,050	1,319	1,050	1,486	1,050	42%
Based Aircraft			3	3	3	3	4	3	33%
Operations	Loa	Wayne Wonderland	1,567	1,800	1,766	1,800	1,989	1,800	11%
Based Aircraft			4	4	5	4	5	4	27%
Operations	Manila	Manila	260	450	278	450	298	450	-34%
Based Aircraft			0	1	0	1	0	1	-100%
Operations	**Totals**		**1,240,357**	**1,313,057**	**1,452,137**	**1,486,663**	**1,709,494**	**1,637,717**	**4%**
Based Aircraft	**Totals**		**1,960**	**1,970**	**2,203**	**2,150**	**2,699**	**2,302**	**17%**

Source: FAA Terminal Area Forecasts 2006, UDOA, Wilbur Smith Associates.

SUMMARY

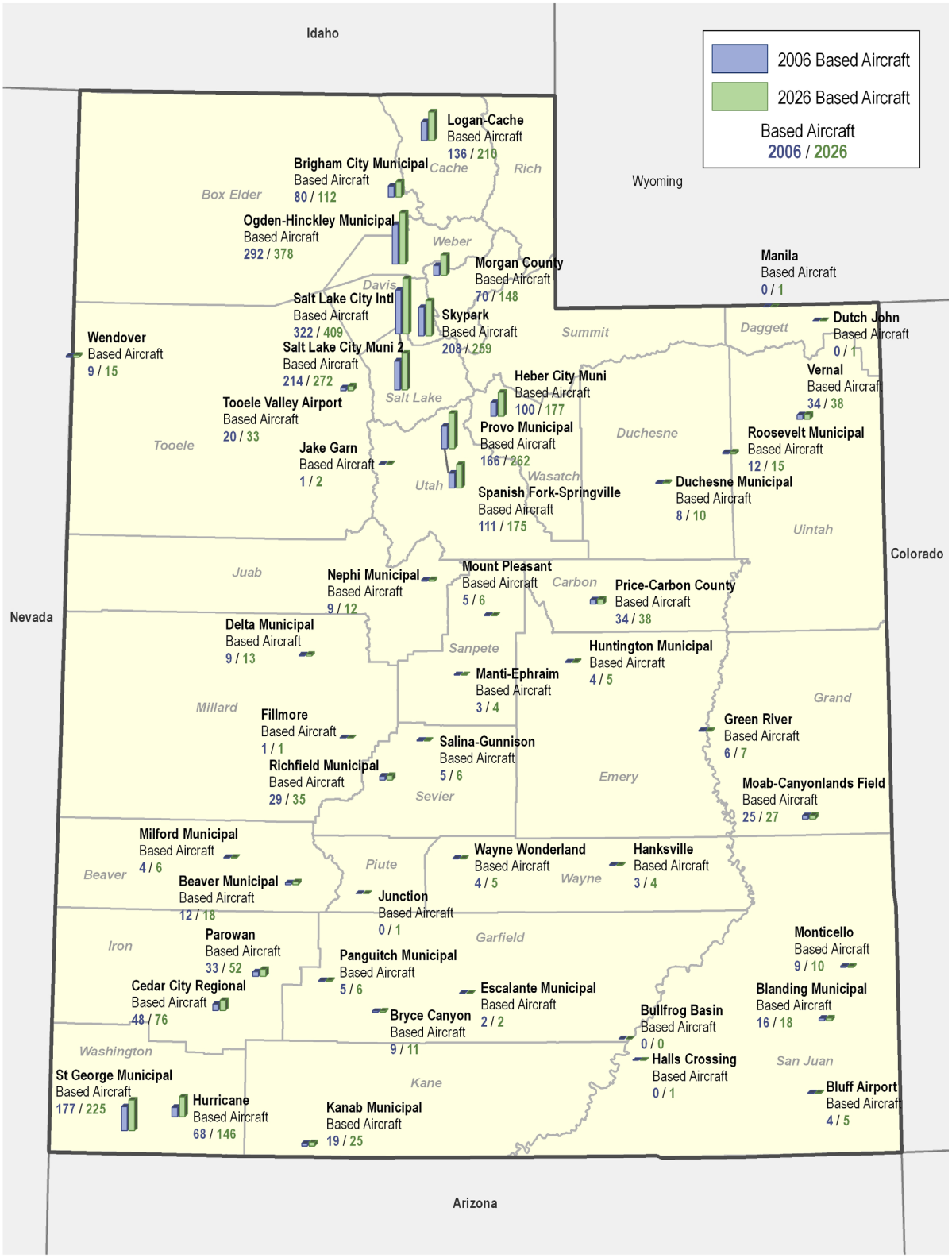
The projections developed in this chapter will be used in the evaluation of the existing airport system's ability to accommodate future demand. The projections provided in this chapter are considered planning estimates and are based on information gathered from the best available sources. These projections were developed to a system planning level of detail versus a more detailed individual airport master plan forecast. Comprehensive airport master plans will continue to provide guidance for actual airport development, as these plans and forecasts are developed from a detailed examination of each airport's local conditions and operating environment. **Exhibits 4-11** and **4-12** present the current and projected number of total operations and based aircraft for each system airport at the end of the 20-year forecast period.

Exhibit 4-1
Current and Projected Total Aircraft Operations



Source: 2007, UDOA, Wilbur Smith Associates

Exhibit 4-2
Current and Projected Based Aircraft



Source: 2007, UDOA, Wilbur Smith Assocates